

AMENDMENTS

This section presents changes to the specification and the claims in a clean-unmarked format. A version with markings to show the changes made by the current amendment is provided after the remarks section.

In the Drawings:

N.E. Figure 1B is enclosed herein with redlined corrections made pursuant to 37 CFR 1.121 for approval by the Examiner.

In the Specification:

A1 Please replace the paragraph beginning at page 6, paragraph 27 with the paragraph:

According to one embodiment, comprehensive manageability may provide remote monitoring via a web-based interface for NOC (Network Comprehensive Center) operations and customers, ensure high availability, and allow easy tracking of failed device and 5-minute MTTR. Further, comprehensive manageability may comprise multi-level management with web-based 125, 150, highly integrated; system management software, standards-based SNMP Agent 120, 145 to integrate with existing SNMP-based systems 170, and local management via LCD-based console on server enclosures. *A2*

CM+ Please replace the paragraph beginning at page 6, paragraph 29 with the paragraph:

The HA management of the present invention is highly reliable. Advantageously, the HA management system 100 is fault tolerant, which leverages the carrier-class modular architecture of a server system, and does not require a costly management module. The HA management system 100 may provide health and performance detection system, and system administration, with failure detection/recovery with auto alerts and logs. Further, the HA management system 100 may manage remotely from a Network Operations Center 160 or over the Internet using a web-based 165 highly integrated manager. The HA management system 100

A2 may be fault-tolerant with fail-over protection, so that the system 100 or user-defined auto-alerts
cmcl may predict failures before they happen and track system and network performance for capacity planning, with no additional requirement for hardware.--

A3 Please replace the paragraph beginning at page 7, paragraph 31 with the paragraph:

-- According to one embodiment, an active manager 105 may provide single-point access into a group of servers 130 for comprehensive system management. For example, the access may be provided via a web-based user interface 175 that provides full monitoring, configuration, and failure detection/recovery of all servers 105, 130 in any given group. Further, from the interface, a user may monitor pertinent system status, performance status, and environmental parameters that can be used to identify a chassis or server that is malfunctioning, incorrectly configured, or is at risk of failing. According to one embodiment, the information may be displayed in a hierarchical fashion to provide a quick, easy, and efficient way to take a detailed look at any of the server components. Further, the centralized alert mechanism may be employed to provide a clear indication of new warning or critical conditions, even while displaying information about other system components. --

A4 Please replace the paragraph beginning at page 9, paragraph 38 with the paragraph:

-- Any manufacturer of equipment providing management capability that can be operated or managed remotely or that requires automation or processes may be interested in using the positive location identification capability of the present invention. Further, companies using electronically readable unique chassis identification and referenced physical server module slot location to determine server module location for management and provisioning may be interested in various embodiments of the present invention. --

~~Please replace~~ the paragraph beginning at page 10, paragraph 41 with the paragraph:

A5
-- **Figure 1C** is a block diagram conceptually illustrating a deployment server platform, according to one embodiment of the present invention. For a robust, reliable, and highly automated infrastructure, a dedicated deployment server 192 may be required, along with a development server 186. The deployment server 192 may be identical to the development server 186 with the addition of deployment software and a web-based management interface. The deployment server 192 may be as reliable as any other server 105, 130 in the data center, especially if automated deployment processes for recovery or scaling are to be mandated to meet SLAs. Further, server system health monitoring may be critical to ensure that automated or scheduled processes do take place. Therefore, the deployment server 192 may need to be constructed with the same care and features as the production servers being used.

~~Please replace~~ the paragraph beginning at page 12, paragraph 48 with the paragraph:

*A6
Cm.t*
-- **Figure 3** is a block diagram conceptually illustrating a server management system with an active manager, according to one embodiment of the present invention. According to one embodiment of the present invention, a High-Availability System Manager (HA Manager) may be installed on each of the server blades 305-320 in a chassis 330. When server health and performance metrics are to be used to initiate automated processes, the source of those metrics would have to be reliable. There may be at least two server blades installed in the chassis 330 to perform HA management. According to one embodiment, an election process may decide which one of the server blades 305-330 is to be the active manager of the chassis 330. The election may be performed based on various factors, which may be predetermined. For example, it may be predetermined that a server blade, e.g., 310, with the lowest IP address will be chosen as the active manager. Once elected, the active manager 310 performs its duties until it fails or shuts down for some reason, such as an upgrade. In any event, when the active manager 310 fails, or is to be replaced, another election process takes place to elect the next active manager. For example, the server blade with the lowest IP address at the time may be elected as the new active manager. The election of the next active manager may occur almost immediately. Further,

Sub A-6 according to one embodiment, a redirection process may simply redirect anyone contacting the failed (previously active) manager to the new manager.

Please replace the paragraph beginning at page 14, paragraph 52 with the paragraph:

A 7 -- **Figure 5** is a block diagram conceptually illustrating high-availability (HA) management, according to one embodiment of the present invention. As illustrated, a server module (module) 510 may be coupled to hardware device drivers 540, runs applications or services, which via hardware device drivers 540 communicate with server devices and server operating system (operating system) 545. According to one embodiment, each server module 510 may have a separate server management device (management device) 515, such as a hardware device requiring a device driver in order for the operating system 545 to communicate with the management device 515 and the software middleware (middleware) 535. The management devices may include, but are not limited to, temperature sensors, voltage sensors, and cooling fan tachometer sensors. The device drivers 540 may control the management devices 515, which manage and monitor various factors, such as temperature, including board temperature, processor temperature, etc. These management devices 515 may be appropriately developed for each server operating system 545 to provide the same information regardless of which operating system they are developed for. --